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Alberta Oil Sands Information Centre

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ALBERTA
RESEARCH
COUNCIL



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The ongoing need for current information from a multitude of sources has resulted in the establishment of specialized information centres. These centres serve industry, governments and researchers by organizing and disseminating information in specific fields. This service thus simplifies the normally tedious and time-consuming task of researching a subject area and also allows for prompt and efficient updating.

Since its inception in 1975, the prime objective of the Alberta Oil Sands Information Centre has been to provide a dynamic and comprehensive service in the collection and dissemination of literature on Alberta oil sands -- a service which has received international recognition.

As part of the Alberta Research Council and funded by the Alberta Oil Sands Technology and Research Authority (AOSTRA), it maintains a valuable proximity to technical expertise in the oil sands, heavy oil, and enhanced recovery fields.

Major activities of the Information Centre are:

- (a) the Alberta Oil Sands Index.
- (b) the Heavy Oil/Enhanced Recovery Index.
- (c) the TAR Paper.
- (d) the Physical Properties data base.

SERVICES

A. ALBERTA OIL SANDS INDEX AND HEAVY OIL/ENHANCED RECOVERY INDEX

Each Index consists of a published cumulative edition, updated quarterly, and an online computer-searchable data base.

1. Index Format

The Index format was designed to be as versatile as possible, thereby allowing the searcher to retrieve the desired information by more than one method. Each Index consists of a Numerical Title Listing and the following five sub-indices: (See Appendix A and Appendix B).

- Author Index
- Corporate Author Index
- Publication Source Index
- Patent Country Index
- Subject Index

All entries in the Author, Corporate Author, Publication Source, and Patent Country Indices include document number, title, author(s), publication source, date of publication, and number of pages in each article. Entries in the Subject Index consist of a document number together with category and weight codes.

The category code indicates which subject category the keyword relates to and the weight code describes the keyword's emphasis in relationship to that category. (See Appendix A and Appendix B).

The Numerical Title Listing includes the complete title and reference as in the Author Index, together with the category codes, indicating the subject coverage of the document.

2. Index Subscription Rates

Both the printed Alberta Oil Sands Index and the Heavy Oil/Enhanced Recovery Index are available on an annual subscription basis. The subscription rates for both Indices are identical and are determined according to the size and type of organization.

Annual Subscription Rates

<u>Number of Employees</u>	<u>Subscription Rate</u>	<u>Each Additional Set</u>
Group 1 (more than 100 employees)	\$500./year/index	\$110./year/index*
Group 2 (25-100 employees)	\$400./year/index	\$ 90./year/index*
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The subscription year is January to December and includes one copy or set of the latest cumulative edition plus quarterly updates. Should the subscription be received after October 1st, it is automatically continued throughout the following year.

*Extra copies are intended for circulation within the organization of the applicant. Each organization supported by a separate budget will be expected to take out its own subscription (e.g. parent companies, subsidiary companies, institutions affiliated with universities, university departments, government departments, boards and commissions, etc.).

3. Online Indices

The online data bases, AOSI (Alberta Oil Sands Index) and HERI (Heavy Oil/Enhanced Recovery Index) contain all information available in printed form. The advantage is that users with access to a computer terminal can design searches to their individual needs. Biweekly updates provide rapid access to new material (on SPIRES only).

AOSI and HERI are available on SPIRES (Stanford Public Information Retrieval System) at the University of Alberta. The cost of searching the data bases is \$30.00 per connect hour, plus host computer charges. Connect time charges will be billed quarterly by the Centre. Separate monthly invoicing for computer time will be done by the University of Alberta. To arrange access to either or both of the data bases, please contact the Information Centre.

In addition to SPIRES, users may access AOSI on the CAN/OLE Information Retrieval System through CISTI (Canada Institute for Scientific and Technical Information), Ottawa, Ontario. AOSI and HERI are also available via QL Systems Limited, Calgary, Alberta.

The Centre will perform customized searches for organizations or individuals upon request. The fee will be cost plus a nominal charge.

B. CURRENT AWARENESS SERVICE

A "Current Awareness" service which consists of all the recently added titles in both indices is issued biweekly. This was developed in response to the need of related industries to remain as well-informed as possible about new developments in their fields. The service includes document numbers, titles, authors, publication source or patent country, date of publication and the number of pages in each document. It also includes the subject category and an abstract of each article. (See Appendix C).

The cost is \$40.00 per year / index (\$30.00/additional copy / index) which includes postage and handling.

C. PHOTOCOPY SERVICE

All indexed documents are on file at the Centre and photocopies are available at a cost of 20¢ per page with a \$2.00 minimum charge. Since obtaining many of the indexed documents may not be possible or may be uneconomical due to time constraints, this service has proven to be invaluable to many of our clients. Documents may be ordered by telephone, mail or online (if data base is accessed through the University of Alberta or CISTI). The cost of photocopying may be determined from the number of pages indicated in brackets at the end of the reference entry in the indices.

D. TAR PAPER

The Information Centre also publishes a newsletter called the TAR Paper. Issued several times per year, the TAR Paper is designed to facilitate communication among members of the oil sands / heavy oil community, particularly in research and development. The TAR Paper is free upon request and submissions are invited.

E. PHYSICAL PROPERTIES DATA BASE

A need for rapid and easy access to data on the physical properties of oil sand, bitumen, heavy oil and synthetic crude has led to the development of a numerical data base. This data base allows interested parties to analyze and correlate data from various locations.

F. OTHER SERVICES

Acting as a referral centre, the Oil Sands Information Centre directs individuals to appropriate people, departments, or organizations.

The Centre also provides information to various groups by giving lectures to groups and schools, preparing audio-visual materials and organizing displays at meetings and conferences.

Queries from the general public are welcome provided that they are infrequent and of a limited nature.

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Declaration

1. I hereby declare that the number of employees (i.e. group) indicated is correct, and
2. that the use of the Index (Indices) will be restricted to the staff of the applicant. (Except publicly funded libraries).

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Cheques should be made payable to the ALBERTA RESEARCH COUNCIL and mailed to:

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APPENDIX A
SUBJECT CATEGORIES
AND
SAMPLE PAGES OF
ALBERTA OIL SANDS INDEX

APPENDIX A

ALBERTA OIL SANDS INDEX SUBJECT CATEGORIES

- A - ANALYSIS AND PROPERTIES - Physical, chemical and engineering properties of Alberta oil sands bitumen, its fractions and the derived synthetic crude. Procedures to analyse bitumen and its products, such as elemental/structural analyses, chromatography, and spectroscopy. This category applies to bitumen from Athabasca, Cold Lake, Peace River, Wabasca deposits, and the Grosmont Carbonate Trend, but not to bulk oil sands (see Category G), bitumen from other sources, or Lloydminster heavy oil (see Category R).
- C - COMMERCIAL DEVELOPMENT - Companies, consultants, contractors, etc. involved in developing oil sands in Alberta. General operations of plants such as Suncor, Syncrude, and Cold Lake Phased Project. For specific processes, categories I, S, and U are used.
- E - ECONOMICS - Costs of research and development, changes in the petroleum market's supply and demand, pricing fluctuations influenced by economy. Comparison of the cost attractiveness of a bitumen recovery/upgrading process versus other related processes.
- G - GEOSCIENCES - Exploration and resource evaluation activities such as coring, logging and drilling. Surficial and reservoir information about Alberta oil sands deposits, e.g. topography, stratigraphy, geochemistry. Other reservoir related topics -- paleontology, formation water, limestone, fluid-rock interaction.
- H - HISTORY - Historical events or people involved in the early oil sands development, e.g. Bitumount plant.
- I - IN-SITU RECOVERY - Processes for extracting bitumen from the reservoir with minimal disturbance to the matrix. Includes thermal (steam injection, combustion, electric heating), chemical (gas, solvent, surfactant), and mechanical techniques (fracturing, sonic method, mine-assisted in-situ process), or a combination of the above.
- M - MINING - Surface mining technology and equipment, which usually emphasizes the Suncor and Syncrude operations. Also underground mining, hydraulic mining, etc.
- N - ENVIRONMENT - Baseline information on the natural environment prior to an oil sands project. The impact of oil sands development on the environment (air, water, soil, flora, fauna, and human).
- O - SOCIAL IMPACT - Effects of oil sands development on people, towns, and secondary industries in the surrounding areas.

APPENDIX A (CON'T)

- P - PRODUCTS - Properties and uses of the products and by-products of bitumen upgrading (synthetic crude blends, coke, sulfur, trace metals, tailings sand).
- R - RELATED SUBJECTS - Oil sands deposits outside of Alberta, heavy oil recovery (selective coverage only), and some unconventional energy resources such as coal and oil shales, when the technology is similar and might be applicable to oil sands (i.e. retorting, pyrolysis, gasification).
- S - SEPARATION - Processes, equipment, etc. to separate bitumen from mined oil sands (hot water process, oleophilic sieve, solvent extraction, etc.).
- U - UPGRADING - Means to produce synthetic crude oil from raw bitumen such as coking, cracking, hydrotreating, solvent deasphalting and visbreaking. Equipment and additives (i.e. catalysts) used in an upgrading process.
- V - GOVERNMENT - The involvement of various levels of government in oil sands development, and their interaction with the industry (applications, hearings, leases, pricing, and other regulatory aspects).

The weight describes the level of detail. A weighting system of 1 to 3 is used:

- 1 - in depth coverage
- 2 - of secondary importance, not main emphasis
- 3 - marginal coverage, such as tables, etc.

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ISOPACH MAP --> MAP

ITALY

004762 R2 007422 R1 007426 R3 009170 R2 009211 R2

JAPAN

006534 C1 007355 I2 007545 U3
 000119 R2 000484 R3 000998 R2
 006003 R2 007489 R3 007545 R2
 008187 R2 008191 R3 008276 R2
 009077 R2 009211 R3 009234 R3

JAPAN ORGANO CO

001743 R3

JAPAN PETROLEUM EXPLORATION CO

000858 C3 001059 C2 001307 C3

JAPANESE OIL SANDS ALBERTA LTD

006016 I1 006020 I1

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JET FUEL

001664 P1 004933 P1 005052 P1
 007555 E3/P2 007705 P2 007817 P3
 001714 R3 004933 R1 005050 R2
 006829 R1 006846 R1 007555 R1
 008857 R2

JOB0 FIELD, VENEZUELA --> VENEZUELA

JOLI FOU FORMATION

000273 G2 000299 G2 000315 G3
 009053 G2

JOSLYN CREEK

006492 G1/N1 006666 G2 007909 N2 007915 N2

KANSAS, US

000197 R2 001767 R3 003857 R2
 005687 R1 006268 R1 006313 R1
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 002902 R2 002903 R2

KENTUCKY RECLAMATION ASSOCIATION

002902 R2 002903 R2

KENTUCKY, US

000826 R2 001818 R2 002084 R2
 008152 R3 008211 R1 008261 R1
 008551 R1 008778 R2 009047 R2

 A-Analysis & Properties E-Economics H-History M-Mining O-Social Impact R-Related Subjects U-Upgrading
 C-Commercial Development G-Geosciences I-In Situ Recovery N-Environment P-Products S-Separation V-Government

005188	Industrial Water Use Survey -- Athabasca River Basin, Red Deer River Basin, Peace River Basin Alberta Department of Industry and Tourism, July 1970 (24)	C	N	R
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A-Analysis & Properties	E-Economics	H-History	M-Mining	O-Social Impact
G-Commercial Development	G-Geosciences	I-In Situ Recovery	N-Environment	P-Products
				R-Related Subjects
				S-Separation
				U-Upgrading
				V-Government

APPENDIX B
SUBJECT CATEGORIES
AND
SAMPLE PAGES OF
HEAVY OIL/ENHANCED RECOVERY INDEX

APPENDIX B

HEAVY OIL/ENHANCED RECOVERY INDEX SUBJECT CATEGORIES

- A - ANALYSIS AND PROPERTIES - physical, chemical and engineering properties of reservoir rock and fluids (heavy oil, enhanced recovery oil, brine) or systems used to represent the reservoir. Methods applying strictly to their measurement and the validity of these methods. For further implications or the effects of these properties, see RECOVERY PROCESSES, GEOSCIENCES, or UPGRADING PROCESSES.
- C - COMMERCIAL DEVELOPMENT AND ECONOMICS - Economics and commercial development on the international, national, provincial, municipal levels, and the interactions among these levels. Analysis of market, financing, trade, etc. Also social impact due to the above factors.
- E - ENGINEERING - Research, design, testing and commercial development of equipment, a plant, or an entire project. Technical aspects of manufacturing, operating, maintaining, and managing a project.
- G - GEOSCIENCES - Techniques of exploration and their assessment. Origin and morphology of oil and the structure and characteristics of the reservoirs in which the oil is contained.
- N - ENVIRONMENT - Baseline studies of the main ecological components such as air, water, soil, fauna, flora. Environmental impact/control.
- R - RECOVERY PROCESSES - Chemical, miscible gas, thermal. Preliminary feed treatment (de-sanding, de-watering, gas scrubbing). Equipment and its operation. Interaction between oil, reservoir and injected fluids.
- U - UPGRADING PROCESSES - Coking/cracking. Hydrogenation. Recovery of sulfur, trace metals and other materials having commercial potential. Generation of secondary industries. Upgrading equipment and properties of catalysts and other chemicals used in the various processes.
- V - GOVERNMENT - The role various levels of government play in resource development. Interaction between governments, industries, major financing institutions, and foreign economics.

The weight describes the level of detail. A weighting system of 1 and 2 is used:

- 1 - major emphasis
- 2 - lesser emphasis

Document numbers are combined with a choice of field designated as:

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- H - Heavy oil (as defined at the 2nd UNITAR Conference in Venezuela), including enhanced recovery processes pertaining thereto.
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A-Analysis & Properties		E-Engineering		R-Recovery Processes		U-Upgrading	
C-Commercial Development/Economics		G-Geosciences		N-Environment		V-Government	

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	A-Analysis & Properties	E-Engineering	R-Recovery Processes	U-Upgrading
C-Commercial Development/Economics		G-Geosciences	N-Environment	V-Government

APPENDIX C

CURRENT AWARENESS SERVICE

- AOSI
- HERI

January 23, 1984

***** ALBERTA OIL SANDS INFORMATION CENTRE *****

009338 Tar Sands Development Study at Suncrude, By V Srajer
Western Miner, V 56, N 8, Aug 1983 (2)

Categories: E, M

A CANMET sponsored study shows that smaller scale oil sands surface mining/separation plant (25,000 b/d capacity) using proven technology is feasible and economically attractive. (see 009120 to 009123 for the actual study). no references.

***** ALBERTA OIL SANDS INFORMATION CENTRE *****

009339 First-Ever Oil Sands Deep Mining Venture, By N Cotter
North Miner, V 69, N 39, 1 Dec 1983 (2)

Categories: I, M

This article briefly covers the research and development of the first phase of AOSTRA underground oil sands mining project. no references.

***** ALBERTA OIL SANDS INFORMATION CENTRE *****

009340 Syncrude: Ace in the Hole for Alberta
Edmonton J, 18 Dec 1983 (2)

Categories: E, M, N, S, U, V

With its operation under control and increased government investment, Syncrude is improving the overall operation efficiency and looking at new approaches such as pipelining oil sands slurry from satellite mining stations, and short-term prediction of air quality for better emission monitoring. no references.

Heavy Oil and Enhanced Recovery Index
Abstract Service

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***** ALBERTA OIL SANDS INFORMATION CENTRE *****

- 2099E Miscible Flood Study -- Pembina Nisku 'P' Pool, By F D Huang
Texaco Canada Resources Ltd, Dec 1981 (82)

Categories: G, R

A hydrocarbon miscible recovery scheme is proposed for the Pembina Nisku 'P' field in Alberta. The reservoir is first repressurized with water, followed by injection of hydrocarbon under miscible pressure which is maintained during the production cycle. A residue push gas will finally replace the hydrocarbon solvent as driving fluid at the end of the cycle. Miscibility pressure, phase behavior and slug size are determined in a slim tube test, the data of which are included in the end of the report. 7 references.

***** ALBERTA OIL SANDS INFORMATION CENTRE *****

- 2100H Catalytic Upgrading of Vacuum Residue Oils, By H Fujitsu, Y Takeshita, Y Korai, K Takeshita, I Mochida
Pan-Pacific Synfuels Conf, Japan Pet Inst, Tokyo, 17-19 Nov 1982, P 590-597 (8)

Categories: A, U

A laboratory catalytic cracking process is evaluated using Orinoco and Khafji vacuum residues as feedstocks and aluminum oxide as a catalyst. The effect of a hydrogen donor additive (9, 10-dihydroanthracene) on desulfurization is also analyzed. 11 references.

***** ALBERTA OIL SANDS INFORMATION CENTRE *****

- 2101H 4,283,088 Patent - US, Thermal Mining Method of Oil Production
By V P Tabakov, B P Kornev, L N Buchenkov, A T Gorbunov, V E Kaschavtsev, V P Pilatovsky, E I Gurov, A I Obrezkov, G G Vakhitov, R T Bulgakov, V P Maximov, R A Maxutov, A I Schnirelman, B E Dobroskok, K A Asfandiyarov, A K Fatkullin,
11 Aug 1981 (17) [Canada Patent 1,105,379]

Categories: R

This patent proposes a mine assisted recovery scheme that injects steam alternately into different groupings of strategically drilled wells so that oil flow direction can be altered and greater sweep could be achieved. 4 references.